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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,837	03/23/2004	Joseph Pugach		4239

7590 03/24/2006  
William L. Kraye  
1771 Helen Drive  
Pittsburgh, PA 15216

EXAMINER

VANOY, TIMOTHY C

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Cm

<b>Office Action Summary</b>	<b>Application No.</b> 10/806,837	<b>Applicant(s)</b> PUGACH, JOSEPH	
	<b>Examiner</b> Timothy C. Vanoy	<b>Art Unit</b> 1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☒ Claim(s) 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Specification***

- a) The status of the parent application set forth on pg. 1 in the specification should be updated.

### ***Claim Objections***

- a) In claim 21 line 2, "said" is misspelled.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

The person having ordinary skill in the art has the capability of understanding the scientific and engineering principles applicable to the claimed invention. The references of record in this application reasonably reflect this level of skill.

Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 198 36 585 C1 to Plzak.

The English abstract of the Plzak publication describes the use of a gold/iron catalyst material for oxidizing carbon monoxide in reformat hydrogen.

The German text within the Plzak publication appears to describe two different ways in which the iron/gold catalyst was made. It appears that according to one method set forth on pg. 2 line 66 to pg. 4 in the Plzak publication, a water soluble Fe(III) salt was mixed with a base; then the resulting iron hydrogel-containing solution was mixed with a water-soluble gold compound to form gold clusters on the surface of the iron hydrogels; the water of the resulting suspension was separated off from the resulting reaction product solids, and the resulting reaction product solids were calcined at a temperature in the range of 350 to 700 °C to produce the iron/gold catalyst. It appears that according to another method set forth on pg. 3 lines 13-17 in the Plzak publication, a solution comprising both water soluble Fe(III) salts and water soluble gold compound was mixed with a base; the water was separated off from the iron and gold compound-containing reaction product, and the iron and gold compound-containing reaction product was calcined at 350 to 700 °C to produce the gold and iron-containing catalyst.

It is expected that the iron and gold-containing catalyst will also inherently be activated as it oxidizes the carbon monoxide in the oxygen and hydrogen-containing gas (please also see pg. 4 line 55 in the Plzak publication). Please note that pg. 4 lines 54-55 in the Plzak publication sets forth that the gas being treated comprises 1% CO,

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1%O<sub>2</sub>, 75%H<sub>2</sub> and the balance being nitrogen, and that the treatment temperature is 80 °C (the same conditions required in the applicant's activation step).

Note that "Vergleichsbeispiel 1" on pg. 4 sets forth the use of Fe(NO<sub>3</sub>)<sub>3</sub> · 9H<sub>2</sub>O; H<sub>2</sub>AuCl<sub>4</sub> · 3H<sub>2</sub>O and also Na<sub>2</sub>CO<sub>3</sub> at a temperature of 80 °C and a pH ranging from 7.9 to 8.1.

The difference between the applicants' claims and the Plzak publication is that the applicants' claims set forth that the catalyst product was ground to a size ranging from 0.85 mm to 4.25 mm, whereas the Table set forth on pg. 5 in the Plzak publication sets forth catalyst particle sizes that may range from 2.5 nm. to 4.5 nm.

The sentence set forth on pg. 4 lines 35-36 in the Plzak publication sets forth that the catalyst material of the invention may be compressed or molded into pellets.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to grind the catalyst material to a size ranging from 0.85 mm to 4.25 mm, as required in the applicants' claims, because the sentence set forth on pg. 4 lines 35-36 in the Plzak publication sets forth that the catalyst material may be may be molded or compressed into pellets and the "Pellets" set forth in pg. 4 line 36 in the Plzak publication is not seen to be distinct from the solids having a size ranging from 0.85 mm to 4.25 mm as set forth in the applicants' claims.

The following references are made of record:

DE 39 14 294 A disclosing the use of a supported gold catalyst for the low temperature oxidation of carbon monoxide;

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U. S. Patent 4,839,327 disclosing a method for the production of ultra fine gold particles immobilized on metal oxide;

U. S. Patent 4,937,219 disclosing ultra-fine gold particulate-immobilized alkaline earth metal compounds;

U. S. Patent 5,051,394 disclosing a method for the production of ultra-fine gold particulate-immobilized oxides;

U. S. Patent 5,068,217 disclosing carrier catalysts for oxidizing carbon monoxide and processes for their production;

U. S. Patent 5,112,787 disclosing a gold and iron-containing catalyst for oxidizing carbon monoxide;

U. S. Patent 5,550,093 disclosing the preparation of supported gold catalysts for carbon monoxide oxidation;

U. S. Patent 5,759,949 disclosing a supported gold-complex oxidation catalyst;

U. S. Patent 5,789,337 disclosing materials having ultra-fine gold particles immobilized thereon;

U. S. Patent 6,086,835 disclosing an oxidation catalyst comprising gold and a method for oxidizing carbon monoxide, and

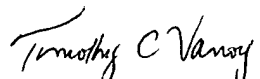
U. S. Patent App'n. Pub. No. US 2001/0043899 A1 disclosing the use of a gold and iron-containing catalyst to treat carbon monoxide (please see claims 1 and 5).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy C. Vanoy whose telephone number is 571-272-8158. The examiner can normally be reached on Mon-Fri 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Timothy C Vanoy  
Patent Examiner  
Art Unit 1754

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